

Rulison Monitoring Results

Noble Energy Well BM 35-32A

Well: Gas production well, Battlement Mesa 35-32A, API # 05-045-10919. (Pad 35 is near the Rulison, CO, Site.)

Operator: Noble Energy, Incorporated

Sampler: U.S. Department of Energy, Office of Legacy Management, Grand Junction, CO.

Date of Sampling Event: 28 May 2008

Samples of natural gas and produced water were collected from production well BM 35-32A. Location data for the surface collection point and the sample location are given in Table 1. A description of the samples collected is found in Table 2.

Table 1. Well BM 35-32A, API # 05-045-10919

Sample Point Location	Location	Sample Location						
		Sea Level elevation (feet)	Distance (feet) from		Surface		Distance from GZ (miles)	Heading from GZ (deg)
			N-S Section line	E-W Section line	Latitude (NAD 27)	Longitude (NAD 27)		
Surface	NENW S35 T7S R95W	9,236.0	764.66 FNL	2,136.87 FWL	39.398934	-107.965878	1.063	W23.1°S
Subsurface	SWNE S35 T7S R95W	128.6	1,435.54 FNL	2,046.80 FEL	39.397080	-107.962045	0.952	W35.4°S

Location data updated 28 May 2008.

NA: not available

The subsurface elevation is at the midpoint of the perforation interval.

Link to Colorado Oil and Gas Conservation Commission information about well BM 35-32A

<http://oil-gas.state.co.us/cogis/FacilityDetail.asp?facid=04510919&type=WELL>

Table 2. Sample Description

Sample Ticket No.	Location			Field Sample Matrix	Analytes	Samp Vol. (L)	Comments
	Name	Type	Sub-type				
NFD-370	BM 35-32A	WL	Angl	Gas	3H, 14C	18.8	P _a ~20 psi
NFD-370	BM 35-32A	WL	Angl	Water	3H, Cl ⁻	0.4	Sample volume decanted from condensate.

3H: tritium 14C: carbon 14 P_a : pressure Cl⁻: chloride

The water sample was submitted to Paragon Analytics in Fort Collins, Colorado for the determination of gross alpha, gross beta, gamma emitting nuclides, and tritium. The results are listed in Table 3.

The natural gas sample was submitted to Isotech Laboratories in Champaign, Illinois, for natural gas analysis and the determination of tritium and carbon-14. The gas analysis results are listed in Table 4.

Table 3. Water Sample NFD-370 Results, Paragon Analytics

RESULTS REPORT

RIN: 08051601

Site: Rulison Site

Location: BM 35-32A

Ticket Number: NFD 370

Report Date: 7/24/2008

Parameter	Units	Sample		Result	Qualifiers		Standard ¹
		Date	ID		Lab	Data QA	
H-3	pCi/L	05/28/2008	N001	3.62	U		20,000
CHLORIDE	mg/L	05/28/2008	N001	13000			

¹USEPA Primary Radionuclide Drinking Water Standard.

Table 4. Natural Gas Sample NFD-370 Results, Isotech Laboratories

RESULTS REPORT

RIN: 08051602

Site: Rulison Site

Location: BM 35-32A

Ticket Number: NFS 370

Report Date: 7/24/2008

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Standard ²
Helium	percent	05/28/2008	N001	0.0019			#	
Hydrogen	percent	05/28/2008	N001	0.0105			#	
Argon	percent	05/28/2008	N001	0.0038			#	
Oxygen	percent	05/28/2008	N001	0.0533			#	
Nitrogen	percent	05/28/2008	N001	0.22			#	
Carbon Dioxide	percent	05/28/2008	N001	5.33			#	
Methane	percent	05/28/2008	N001	88.14			#	
Ethane	percent	05/28/2008	N001	4.51			#	
Propane	percent	05/28/2008	N001	1.07			#	
Isobutane	percent	05/28/2008	N001	0.219			#	
Butane	percent	05/28/2008	N001	0.202			#	
Isopentane	percent	05/28/2008	N001	0.0764			#	
Pentane	percent	05/28/2008	N001	0.0523			#	
Hexanes	percent	05/28/2008	N001	0.111			#	
Carbon-14	Percent modern carbon	05/28/2008	N001	0.2	U		#	
Tritium	pCi/L methane	05/28/2008	N001	0.0514	U		#	

¹ Not detected.

² There are no applicable standards for natural gas.

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

U Analytical result below detection limit.

DATA QUALIFIERS:

F Low flow sampling method used.

J Estimated value.

L Less than 3 bore volumes purged prior to sampling.

R Unusable result.

U Parameter analyzed for but was not detected.

G Possible grout contamination, pH > 9.

Q Qualitative result due to sampling technique.

X Location is undefined.

QA QUALIFIER:

Validated at Level 1 according to quality assurance guidelines.